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A Two-Phase Case-Control Study of Autism Risk Among Children Born From the Late 1990s Through the Early 2000s in the United States

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
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Background: This study evaluated the hypothesis that the 1999 recommendation by the American Academy of Pediatrics (AAP) and US Public Health Service (PHS) to reduce exposure to mercury (Hg) from Thimerosal in US vaccines would be associated with a reduction in the long-term risk of being diagnosed with autism.

Material/Methods: A two-phase assessment utilizing a case (n=73) -control (n=11,783) study in the Vaccine Adverse Event Reporting System (VAERS) database (for hypothesis generating) and a more rigorous, independent matched case (n=40) -control (n=40) study (hypothesis testing) was undertaken.

Results: Analysis of the VAERS database using logistic regression revealed that the odds ratio (OR) for being an autism case in the VAERS database significantly decreased with a more recent year of vaccination in comparison to controls (OR=0.65) from 1998 to 2003. Sex-separated analyses revealed similar significant effects for males (OR=0.62) and females (OR=0.71). Analyses of the matched case-control data revealed, using the t-test statistic, that the mean date of birth among cases diagnosed with an autism spectrum disorder (ASD) (2000.5 ± 1.2) was significantly more in the past than in controls (2001.1 ± 1.3). Logistic regression also revealed that the OR for being diagnosed with ASD significantly decreased with a more recent date of birth in comparison to controls (OR=0.67) from 1998–2003.

Conclusions: This study reveals that the risk of autism during from the late 1990s to early 2000s in the US significantly decreased with reductions in Hg exposure from Thimerosal-containing childhood vaccines, but future studies should examine this phenomenon in other US populations. Vaccine programs have significantly reduced the morbidity and mortality associated with infectious disease, but Thimerosal should be removed from all vaccines.

MeSH Keywords: Autistic Disorder • Child Development Disorders, Pervasive • Ethylmercury Compounds • Thimerosal

Full-text PDF: <http://www.medscimonit.com/abstract/index/idArt/900257>

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